

## **REMARKS**

The office action dated July 13, 2006 (the "Office Action") has been received and noted. Claims 1-14, 16, 26, 27 and 29-41 were examined. Claims 10-14, 16 and 30-38 were allowed. Claims 1-8, 26, 27 and 39-41 were rejected. Claims 9 and 29 were objected to. Claims 1, 26 and 39 are amended. Support for the amendments can be found in, for example, pages 10, lines 21-25, page 11, lines 1-3, page 13, lines 1-25 and page 14, lines 1-4 of the Application. As such, no new matter has been added. Claims 1-14, 16, 26, 27 and 29-41 remain in the application. Reconsideration of the pending claims is respectfully requested in view of the above amendments and following remarks.

Applicant expresses his appreciation to the Examiner for the allowance of claims 10-14, 16 and 30-38.

### **I. Claim Objections**

Claims 9 and 29 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant respectfully requests withdrawal of the objections in view of the above amendments and following remarks.

### **II. Claims Rejected Under 35 U.S.C. § 102**

Claims 1-8, 26-27 and 39-41 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,121,689 to Capote et al. ("*Capote*"). A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. MPEP 2131. Applicants respectfully submit that each and every element, either expressly or inherently, in amended claims 1, 26 and 39 and their respective dependent claims is not set forth in the cited references.

Amended independent claim 1 includes the limitation of "*wherein the second material causes a chemical reaction in a portion of the first material.*" *Capote* describes a flip-chip package with a first portion 37 containing a filler material on substrate 10 and a second portion containing little or no filler on substrate 20. (col. 9, lns. 24-25, 31-32; FIG. 10) *Capote*

specifically states that first portion 37 has a “chemical composition such that it does not interfere or adversely affect the properties of the second portion 39 of the encapsulant to which it will be mated.” (col. 10, Ins. 63-65) As such, first portion 37 cannot chemically react with second portion 39, but instead is fused together by heat. (col. 9, Ins. 56-57) Accordingly, Capote does not describe each and every element of independent claim 1. Dependent claims 2-9 depend on independent claim 1, and therefore include all of its limitations.

Amended independent claim 26 includes the limitation of “*exposing the layer to one of a temperature differential or a pressure differential, wherein a chemical reaction results in the portion of the layer of material increasing in volume.*” Substantially all of the embodiments in *Capote*, on the other hand, include at least two discrete layers. (FIGS. 10-14) Additionally, for embodiments in *Capote* which include one layer, that layer described as an “encapsulant material” merely hardens when exposed to heat. (col. 4, Ins. 17-24) *Capote* does not describe a reaction resulting in an increase in volume of the “encapsulant material.” Dependent claim 27 depends on independent claim 26 and therefore includes all of its limitations.

Amended independent claim 39 includes the limitation of “reacting the first layer with the second layer by introduction of one of a reactant, heat or a gas to form a foam filling in an area between the first and second wafers adjacent to the first and second conductive interconnect structures.” The “encapsulant material” or “multi-layer encapsulant material” of *Capote*, on the other hand, merely hardens when exposed to heat or is “melttable.” (col. 4, Ins. 17-24; col. 22, ln. 17) There is no reaction resulting in an increase in volume of the “encapsulant material” or “multi-layer encapsulant material”. Dependent claims 40-41 depend on independent claim 39 and therefore include all of its limitations.

Accordingly, Applicants respectfully submit that independent claims 1, 26 and 39 and their respective dependent claims are allowable over the cited reference.

### CONCLUSION

In view of the foregoing, it is believed that all claims now pending are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 500-4787.

Respectfully submitted,

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#### CERTIFICATE OF MAILING

I hereby certify that this correspondence is being submitted electronically via EFS Web to the United States Patent and Trademark Office on November 13, 2006.

  
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